

VOLVO ARTICULATED HAULERS

A25D, A30D, A35D, A40D



VOLVO

Volvo haulers

– for higher productivity

Everyday, our haulers prove their power, flexibility and operational reliability on work sites all over the world. Now, we've developed the new generation of articulated haulers. The D-series, with increased payload and body capacities, can haul bigger loads, and faster – at a lower cost. Regardless of terrain and ground conditions. Volvo haulers are designed to ensure effectiveness through high availability – making your operation even more efficient.

The objective of Volvo's machine development is to boost your productivity. That's why we have developed our haulers even further and equipped them with new features that improve the efficiency of your operation. The comfortable operator environment is based on a proven cab design concept and suspension. In combination with new engines and transmission, it allows you to operate at higher average speeds. Our new patented Load & Dump brake and faster dumping hydraulics are just a couple of examples of how we've stepped up the pace and work capacity on loading and dumping sites.

Higher load capacity

Haul even bigger loads. The dump body holds a bigger volume, and load capacity has been increased.

Safe downhill operation

Easy to maintain speed downhill. The user-friendly retardation system facilitates control of the machine.

Increased rimpull

Faster uphill operation. Shifting is automatic, and the operator simply selects the most suitable drive combination.

Faster dumping

Gain time at the dumping site. The steering system makes it easy to position the hauler with great accuracy. The dumping system and the Load & Dump brake provide ease of operation, stability and effectiveness.

Optimized workenvironment

Keeps the operator going on long shifts. Good operator comfort means high productivity.

Excellent off-road performance

Takes you anywhere. Volvo haulers feature superior off-road characteristics.

Higher availability

For maximized uptime. Volvo haulers offer high availability. Service needs have been minimized.



Volvo haulers

– for lower operating costs

All main components for our haulers are developed in-house by Volvo, for example, the drivetrain, frame, cab, electronics and software. This generates results: higher productivity, higher reliability and service friendliness. That's how we've been able to reduce the already low operating costs even more.

Better serviceability

Less downtime for service. The hauler concept is designed for optimal serviceability and access.

Minimized maintenance

Extended service interval times. Fewer oil and filter changes give higher availability, lower operating costs and reduced environmental impact. Automatic level checks and fewer lube points for more uptime.

Reliable

Maintain a high resale value. Long-life components assure fewer repairs and a high second-hand value.

Durable

Minimizes drivetrain and tire wear. Various drive combinations give you flexibility: 6x4 drive on good ground conditions results in less tire wear and lower fuel consumption. 100% differential locks on all axles when operating off-road. Operator selectable on the move.

Fuel efficient

Save all the way. Volvo haulers have low fuel consumption – in fact, the industry's lowest per hauled ton.



Volvo haulers

– for a high level of safety

Volvo haulers have excellent maneuverability, powerful steering and reliable brakes. Productivity increases, just like safety – in all stages of your operation. The D-series features Volvo's frontrunner technology, automatically giving you overall peace of mind.

Improved access for service

Ease of servicing. Required maintenance work is reduced. Level checks are handled by the information system. Slip resistant surfaces and handrails provide easy and safe access to move around on the machine.

Enhanced visibility

Minimize blind spots. Volvo haulers are designed for good visibility around the machine.

Automatic emergency brake

Ensure secondary braking readiness. The automatic brake function helps provide for hauler safety.

Intelligent communication system

Machine work safety. The operator's communication system warns the operator if, for example, the dump body is up and also indicates that the seat belt is unbuckled or the door is open.

Meet environmental requirements

Invest for the future. Volvo haulers fulfill current governing legislation with regards to emissions, external noise level and recycling.

Reduced waste

Reduce the amount of waste oil. Extended service intervals and fewer oil changes save limited resources.

Recycling

Prepared for recycling – from the beginning. The haulers are developed for recycling of components and oil.

Cleaner air

Save fuel. New engine with the industry's lowest fuel consumption per hauled ton. Electronic engine controls help provide for lower emissions.



Operator environment and comfort

– for a more effective work environment

Volvo haulers offer a world-class operator's environment.

The foundation is the ergonomically designed cab with low sound levels, as well as the proven and simple yet comfortable front suspension. Rough operating conditions do not affect the operator's concentration and have no effect on the operator's performance during long shifts. Steering and braking have good reactions to the operator, similar to the steering feel of a truck.

Passive safety

The new, well-designed cab is an award winner. It is built using high-strength steel and meets ROPS/FOPS standards. Operator awareness is enhanced with features such as indication of raised dump body, unbuckled seat belt and open door.

The instructor's seat is located so that the instructor has access to important controls (within easy reach).

The operator's position is high for optimal visibility, yet protected by the front plate of the dump body.

Active safety

Volvo's self-compensating, hydro-mechanical steering system gives an accurate feel for the road – similar to the steering feel of a truck.

The steering is stable at high speeds and powerful when operating in off-road conditions. The heavy-duty design of the system ensures consistent steering performance for the entire life of the machine.

These features make the Volvo steering system superior to all other systems on the market.

The rounded and sloped hood improves visibility for the operator.

Great cab to work in

It's easy to access the cab. Correctly sized and positioned cab steps and a wide door opening without a threshold. The cab is sound-insulated, spacious and pleasant with a well-designed, modern and practical interior.

The cab features a centrally located operator's seat and large glass areas. In combination with well-placed cab pillars and large rear-view mirrors, it offers exceptional visibility all around the machine. Excellent visibility means less operator fatigue, higher productivity and a safe work area.

Well-placed and user-friendly controls, ergonomic operator's seat, tilt-telescopic steering wheel and an effective climate control system all contribute to maintaining high operator efficiency and long-term high productivity.

Clear information

The user-friendly operator's communication system provides simple and easy-to-understand information. The system registers and saves operating information during the work cycle. All information is displayed in order of importance. The reliable communication system helps to make maximum production possible, even in severe operating conditions.

Practical interior

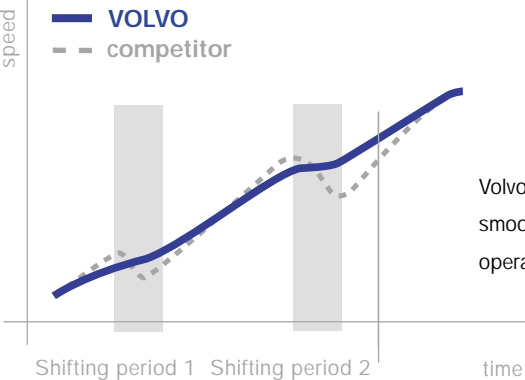
The cab's interior is characterized by excellent practical and ergonomic solutions, and it's easy to keep clean.

When lowered, the instructor's seat becomes a table, next to a convenient 24 volt outlet. There is plenty of storage space for a lunchbox or cooler. To keep the floor clear, the hauler is equipped with several storage compartments, inside and outside the cab.

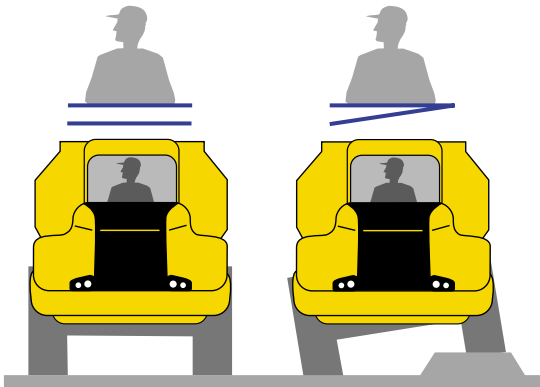
Optional equipment

If you want to enhance the operator's environment further, there is a wide range of optional equipment, from sun visors and air conditioning to a rear vision system.

Comfort when shifting



The three-point suspension allows the operator to sit straight and comfortably, even when operating over rough ground and uneven surfaces.



Drivetrain

– well-matched for maximum performance

Volvo's articulated haulers are equipped with a well-matched drivetrain for optimal use of engine power, torque and rimpull. Correctly matched and Volvo-designed drivetrain components, specifically developed for hauler applications, provide outstanding performance, high productivity, low fuel consumption and ensure long machine life. With Volvo's haulers, you can set the benchmark for the highest average speeds on a wide range of work sites and applications. Our proven hauler transmission is unique. It's developed and purpose-built to give maximum performance.

Electronic engine control

Volvo haulers are equipped with turbo-charged high-performance low-emission diesel engines, featuring electronically controlled injection and intercooler. Cooling is thermostat controlled, with a variable speed fan that only runs when there's a cooling demand, which means optimal use of power and lower fuel consumption.

The engine is electronically controlled by the machine's advanced electronic system. Downtime for service is minimized and uptime is maximized for high productivity.

Optimal shifting quality

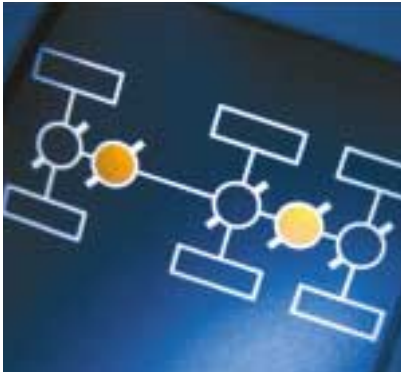
Volvo's automatic planetary transmission, Powertronic, gives high shifting quality. The transmission has been

designed so that shifting takes place at the right time to optimize rimpull and fuel economy and to extend drivetrain life. The dropbox is also optimized for the hauler concept, giving high ground clearance under the hitch. Transmission cooling is controlled by demand.

Power – when and where it's needed

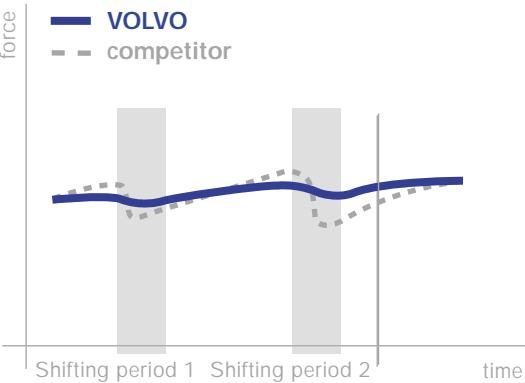
Volvo's haulers are flexible machines. The operator can optimize drive combinations based on the ground conditions.

On good haul roads, you can select 6x4 drive, which reduces tire wear and fuel consumption since fewer drive components are engaged. Only Volvo gives operators the option of selecting 6x4 drive.



When operating in rough conditions, you can select 6x6 drive – and 100% differential locks on one or all axles. Volvo's drive combinations and 100% differential locks have been field-proven for years and are extremely reliable. The operator can engage and disengage different drive combinations on the move. This is a distinct and important advantage, especially when ground conditions change, as they often do, between the haul road and the dumping site. We also equip our haulers with various tire options for different applications.

Rimpull when shifting



The electronically controlled transmission allows the Volvo haulers to maintain high and constant speed during shifting.



Brakes and retarder

– increase productivity and reduce costs

Volvo haulers have service brakes on all wheels, and are not dependent on drivetrain components during braking. A40D is equipped with fully sealed, oil-cooled wet disc brakes, while the other hauler models are equipped with dry disc brakes. Fully sealed wet brakes are available as optional equipment for the A35D. The brake system has two separate circuits. If the pressure in both circuits should fail at the same time, the automatic emergency brake function is activated through application of the parking brake.

User-friendly retardation system

All Volvo haulers have a hydraulic retarder integrated in the transmission. The retarder's quick response and good sustained braking action makes it easier for the operator to run the hauler with optimum average speed throughout the cycle, at the same time reducing wear on the service brakes.

The foot-operated system is a user-friendly and effective alternative, allowing the operator to keep both hands on the steering wheel.

In the A35D and A40D, the retarder works together with a Volvo-patented engine brake: VEB (Volvo Engine Brake). The A25D and A30D are equipped with an exhaust retarder.

Unique Load & Dump brake

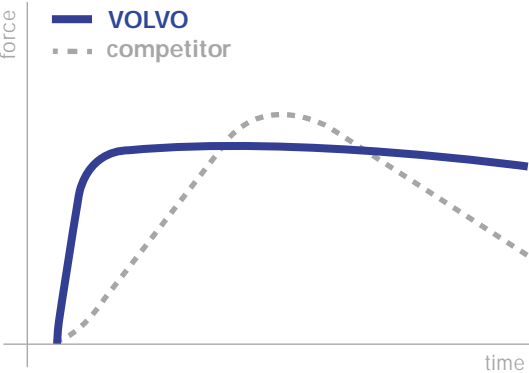
The new generation of Volvo's articulated haulers feature the new and

Volvo-patented load and dump brake. With the single press of a button, the transmission is shifted to neutral and all load unit service brakes are activated.

The brakes are released automatically when the gearshift control lever is moved past the neutral position once again.



Braking force with retardation system



Frames and suspension

– Ensure stability and maneuverability

The steering, drivetrain, frame components and the machine's centers of gravity are designed to work together. The combination allows our haulers to operate with high stability and control at high average speeds, even on long and difficult haul routes. The high ground clearance, the robust steel construction of the underbody and skid plates, as well as excellent bogie movement mean that our haulers can handle the roughest and hardest-to-reach loading and dumping sites. The frame design of the previous hauler generation has been improved with bearings of new design that minimize or eliminate lubrication needs.

Heavy-duty suspension

All axles have a maintenance-free three-point suspension. Three-point suspension makes it possible for each axle to move independently in rough operating conditions, which gives less stress on the frame, optimal ground contact and rimpull while the body remains level.

The well-functioning, reliable and proven design with rubber springs and shock absorbers provide very good operator comfort.

Volvo's proven bogie system, well-known for its reliability and long suspension stroke, is at work under the load unit. The bogie system is centered around a heavy-duty bogie member rubber bushing.

Rugged frame

The underside of the machine has no fragile plastic parts or exposed joints. It's made of steel right through. All components, even the vulnerable rear cross stay are well-protected either above or in the frame construction.



The reliable three-point suspension consists of heavy duty components. A simple and durable design that gives a comfortable smooth ride.



Body and dump system

– For faster dumping

The Volvo hauler's exceptional capacities for steering, maneuvering and mobility make it easy to get the hauler into the right position for loading. It's easy to load the body. Its shape promotes even distribution of the load regardless of loading tool. The load body is a rugged flat plate design made of impact-resistant high-strength steel. The front has a spill guard that effectively protects the frame joint components from material spills. The load body chute has the right length and angle to prevent spills, for example, when hauling uphill. The dumping system has all the needed power, even for dumping up a steep slope.

High-efficiency dumping

When dumping, the shape of the load body promotes release of the load and ensures that it ejects far beyond the rear wheels. The machine's high ground clearance, high placement of the dump hinge and the shape of the load body make it possible to run the machine forward with the body up, without displacing the dumped material or contact with the dump edge when dumping over an edge. The need for dozers on the dumping site is minimized.

The new dumping hydraulics with higher pressure and greater oil flow have reduced dumping times. The two powerful double-acting hoist cylinders quickly lift and lower a full load with optimal control.

Optional equipment

The load body can be adapted to different materials with optional equipment such as tailgates, body side extensions, body heating and extra front spill guard.



Service and maintenance

– For higher availability

The new haulers have stepped into the future, where the demand for minimized service and reduced service downtime is becoming more important. When you operate Volvo haulers, the daily service requirements are reduced by using monitored oil and fluid level checks as well as new types of bearings. We have succeeded in reducing the service needs to a low level.

Coordination advantages

At pace with the ever-increasing environmental requirements, electronics are making their way into the machines – and we’ve used that to the greatest extent.

By coordinating electronic development for the machines, we have attained several advantages: Volvo has one system, whereas others are forced to handle and maintain several different systems. Volvo’s system can read off various machine data, which allows direct analyses of machine operation and quick diagnostics. Performance of Volvo haulers is optimized due to communication between components.

Since other Volvo CE products and Volvo trucks also use these systems, component coordination and experience are great advantages.

Easy access for service – high serviceability

Volvo haulers feature new and practical solutions, like the easily accessed filters and better accessibility around the engine. These are just a couple of all the improvements we’ve introduced to make the Volvo D-series the world’s most service-friendly hauler!

Required service points have good access, and servicing is easy from conveniently located service platforms or from the ground level. Slip-resistant material around the cab and handrails along the cab roof facilitate work, such as washing windshields and side windows.

Spare parts and service contracts

Volvo is the frontrunner when it comes to worldwide service. One of

the great challenges we face is training mechanics and supporting them with an organization for quick distribution of spare parts.

At Volvo, we put considerable effort and work into coordinating components between the different machine types, all to minimize the amount of parts.

We also offer special tools as well as service and support contracts.



The A25D – A30D in detail

Service

The computerized information system monitors all fluid levels, minimizing daily and weekly service times. Time to next service and the status of vital vehicle systems is shown to the operator on a display in the instrument panel.

Service accessibility: Fold down front grill with access ladder to remote filter bank, located in front of engine. Large, 90° opening hood for total engine access. Remote drain hoses and swing out radiator for easy cleaning.

Fill capacities

Crankcase..... 38 l
Fuel tank..... 400 l
Cooling system 71 l
Transmission total 41 l
Dropbox..... 8,5 l
Axles, front/ rear 33 l
First bogie axle 34 l
Hydraulic tank 175 l

Engine

Volvo inline 6-cylinder, direct injected electronic controlled, turbocharged, intercooled 4-cycle low emission diesel engine with wet replaceable cylinder linings.

Fan: Hydrostatically driven, thermostatically controlled variable speed radiator fan consuming power only when needed.

Engine brake: Exhaust retarder.

A25D

Make, model Volvo D10BACE2*
Make, model Volvo D10BADE2**
Max power at 33,3 r/s (2 000 r/min)
SAE J1995 Gross 228 kW (310 hp)
Flywheel power at 33,3 r/s (2 000 r/min)
SAE J1349 Net, DIN 6271*** 227 kW (309 hp)
Max torque at 22,5 r/s (1 350 r/min)
SAE J1995 Gross 1 375 Nm
SAE J1349 Net, DIN 6271*** 1 365 Nm
Displacement total 9,6 l

With fan operating at full speed, the flywheel power is 214 kW (291 hp) and maximum torque is 1 276 Nm which corresponds to DIN 70020.

A30D

Make, model Volvo D10BAAE2*
Make, model Volvo D10BABE2**
Max power at 33,3 r/s (2 000 r/min)
SAE J1995 Gross 242 kW (329 hp)
Flywheel power at 33,3 r/s (2 000 r/min)
SAE J1349 Net, DIN 6271*** 241 kW (328 hp)
Max torque at 22,5 r/s (1 350 r/min)
SAE J1995 Gross 1 420 Nm
SAE J1349 Net, DIN 6271*** 1 410 Nm
Displacement total 9,6 l

With fan operating at full speed, the flywheel power is 228 kW (310 hp) and maximum torque is 1 321 Nm which corresponds to DIN 70020.

*) Meets US (EPA) step 2, California (CARB) step 2 and Europe (EU) step 2.

**) Meets Europe (EU) step 2.

***) with fan at normal speed.



Electrical system

All cables, sockets and pins are identified. Cables are enclosed in plastic conduit and secured to main frame. Halogen lights. Prewired for options. Connectors meet IP67 standard for water-tightness as necessary.

Voltage 24 V
Battery capacity 2x170 Ah
Alternator 1,54 kW (55 A)
Starter motor 6,6 kW (9 hp)

Drivetrain

Volvo components, specifically designed for hauler applications.

Torque converter: Single stage with free wheeling stator and automatic lock up on all gears.

Transmission: Fully automatic planetary transmission with six forward gears and two reverse gears, with an integral variable hydraulic retarder.

Dropbox: Volvo design, single stage.

Axles: Volvo design with fully floating axle shafts and planetary type hub reductions.

Differential locks: One longitudinal and three transverse with 100% lock-up function, operator selectable on the move.

Configuration: 6x4 or 6x6 drive, operator selectable on the move.

	A25D	A30D
Torque converter.....	2,37:1	2,37:1
Transmission, Volvo	PT 1560	PT 1560
Dropbox.....	IL 1	IL 1
Axles, Volvo	AH 56	AH 64

Speed:

Forward	
1	8 km/h
2	12 km/h
3	22 km/h
4	31 km/h
5	40 km/h
6	53 km/h
Reverse	
1	8 km/h
2	13 km/h

Brake system

Dual circuit system with air-hydraulic disc brakes. Complies with ISO 3450 and SAE J1473 at total machine weight.

Service brakes: Dry discs on all wheels.

Circuit division: One circuit for front axle and one for bogie axles.

Parking brake: Spring-applied disc brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%. When the parking brake is applied, the longitudinal differential is locked.

Compressor: Gear driven by engine transmission.

Retarder: Hydraulic, infinitely variable, integrated in transmission.

Total retarding capability including transmission retarder and exhaust retarder, see graph.

Steering system

Hydromechanical self-compensating articulated steering for safe and accurate high speed hauling. Fast acting, low effort steering with 3,4 turns lock-to-lock for slow speed maneuverability.

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Complies with ISO 5010 at total machine weight.

Steering angle: ±45°

Suspension

Volvo's unique maintenance free 3-point suspension system. The axles are suspended at three points, which results in independent movement needed in rough terrain.

Front axle: One hollow rubber spring on each side. A cross stay provides the stability. Two shock absorbers on each side.

Bogie: Volvo's unique terrain bogie permits long suspension travel and independent wheel movement, keeps the body level, retaining the load.

Weights			Ground Pressure				Load Capacity		
Operating weight includes all fluids and operator			At 15% sinkage of unloaded radius and specified weights.				Body volume according to SAE 2:1		
	A25D	A30D		A25D	A30D			A25D	A30D
Tires	23,5R25	750/65R25	Tires	23,5R25	750/65R25	23,5R25			
Operating weight unloaded			Unloaded				Std. Body		
Front	12 160 kg	12 500 kg	Front	123 kPa	101 kPa	127 kPa	Load capacity	24 000 kg	28 000 kg
Rear	9 400 kg	10 560 kg	Rear	48 kPa	43 kPa	54 kPa	Body, struck	11,7 m ³	13,6 m ³
Total	21 560 kg	23 060 kg	Loaded				Body, heaped	15,0 m ³	17,5 m ³
Payload	24 000 kg	28 000 kg					With underhung tailgate		
Total weight			Front	144 kPa	121 kPa	152 kPa	Body, struck	12,0 m ³	13,8 m ³
			Rear	159 kPa	146 kPa	183 kPa	Body, heaped	15,3 m ³	18,0 m ³
Front	14 140 kg	14 990 kg					With overhung tailgate		
Rear	31 420 kg	36 070 kg					Body, struck	12,1 m ³	14,0 m ³
Total	45 560 kg	51 060 kg					Body, heaped	15,6 m ³	18,1 m ³
							With over and under hung tailgate		
							Body, struck	12,1 m ³	--
							Body, heaped	15,6 m ³	--

Cab

Volvo cab, designed for high operator visibility, ergonomics and comfort. Wide threshold-free door opening and ergonomic instep. Isolation rubber pads to reduce vibrations. Tilt/ telescopic steering wheel. Overhead console for radio and storage. Dash-mounted Operator's Communication System. Storage bins.

Standard: ROPS/FOPS tested and approved. (ISO 3471, SAE J1040) /(ISO 3449, SAE J231) standards.

Heater and defroster: Filtered fresh air, four speed fan and pressurized cab to maintain a clean operating environment. Multi-level air outlets and separate defroster vents for all windows.

Operator's seat: Adjustable air suspension operator's seat with flameproof upholstery. Retractable seat belt. Internal sound level, ISO 6396 74 dB (A)

Hydraulic system

Load-sensing variable displacement piston pumps that consume power only when needed.

Pumps: Five engine driven variable displacement, load sensing piston pumps, driven by the flywheel PTO. One ground-dependent piston pump for supplemental steering mounted on the dropbox.

Filter: One fiber glass filter with magnetic core.

Pump capacity per pump:

Engine dependent..... 105 l/min
Ground dependent 142 l/min
at shaft speed 52,5 r/s (3 150 r/min)
Working pressure..... 25 MPa

Body

Load and dump brake: With the engine running, the service brakes on bogie axles are applied and transmission shifted to neutral.

Body material: Hardened and tempered steel body, flat plate design fabricated from Hardox 400.

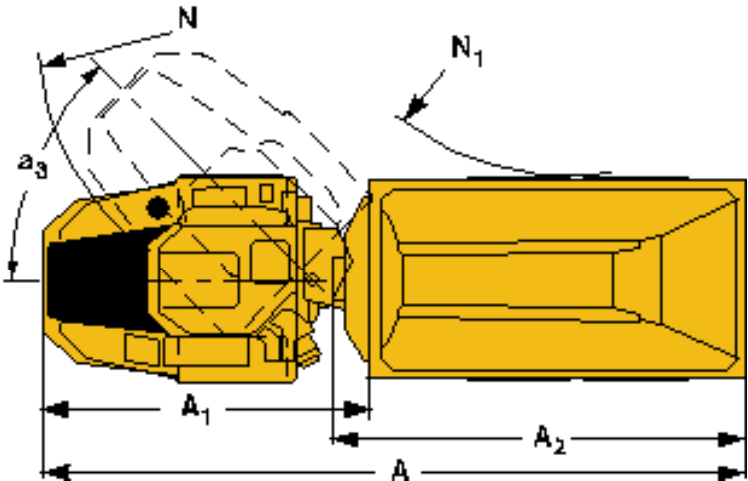
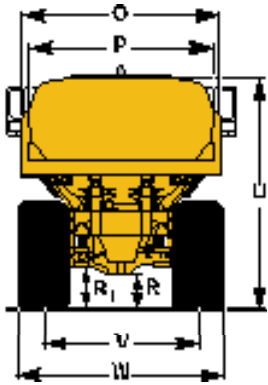
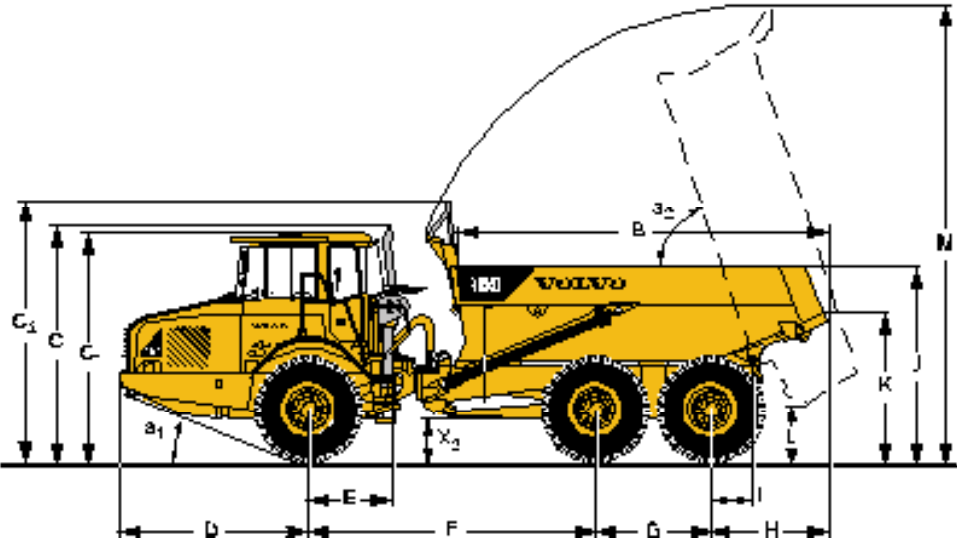
Front..... 8 mm
Sides..... 12 mm
Bottom..... 14 mm
Chute..... 14 mm
Yield strength 900 N/mm²
Tensile strength 1 250 N/mm²
Hardness min 360 HB

Dumping Cylinders: Two single stage double acting cylinders.

	A25D	A30D
Tipping angle.....	74°	70°
Tipping time with load.....	12 s	12 s
Lowering time.....	9 s	9 s

Specifications A25D – A30D

Pos	Metric (mm)		Imperial (Feet)	
	A25D	A30D	A25D	A30D
A	10 220	10 297	33'6"	33'9"
A ₁	4 954	4 954	16'3"	16'3"
A ₂	5 764	6 002	18'11"	19'8"
B	5 152	5 339	16'11"	17'6"
C	3 428	3 428	11'3"	11'3"
C ₁	3 318	3 318	10'11"	10'11"
C ₂	1 768	1 768	5'10"	5'10"
C ₃	3 760	3 834	12'4"	12'7"
D	2 764	2 764	9'1"	9'1"
E	1 210	1 210	3'12"	3'12"
F	4 175	4 175	13'8"	13'8"
G	1 670	1 670	5'6"	5'6"
H	1 610	1 688	5'3"	5'6"
I	608	608	1'12"	1'12"
J	2 778	2 856	9'1"	9'4"
K	2 102	2 181	6'11"	7'2"
L	677	686	2'3"	2'3"
M	6 559	6 592	21'6"	21'8"
N	8 105	8 105	26'7"	26'7"
N ₁	4 079	4 037	13'5"	13'3"
O	2 700	2 900	8'10"	9'6"
P	2 490	2 706	8'2"	8'11"
R	512	513	1'8"	1'8"
R ₁	634	635	2'1"	2'1"
U	3 257	3 310	10'8"	10'10"
V	2 258	2 216	7'5"	7'3"
V*	-----	2 258	-----	7'5"
W	2 859	2 941	9'5"	9'8"
W*	-----	2 859	-----	9'5"
X	456	456	1'6"	1'6"
X ₁	581	582	1'11"	1'11"
X ₂	659	659	2'2"	2'2"
Y	2 258	2 216	7'5"	7'3"
Y*	-----	2 258	-----	7'5"
Z	2 859	2 941	9'5"	9'85"
Z*	-----	2 859	-----	9'5"
a ₁	23,5°	23,5°	-----	-----
a ₂	74°	70°	-----	-----
a ₃	45°	45°	-----	-----
A25D: Unloaded machine with 23,5R25 A30D: Unloaded machine with 750/65R25 * A30D with optional 23,5R25 tires				



STANDARD EQUIPMENT A25D – A30D

- Safety**
- ROPS/ FOPS protected cab
 - Service platform for ease of service
 - Anti-slip material on hood and fenders
 - Hazard lights
 - Horn
 - Protective grille for rear window
 - Rear view mirrors
 - Retractable 3 inch safety belt
 - Secondary steering
 - Steering joint locking assembly
 - Dump body lock
 - Windshield wipers with intermittent
 - Windshield washers

- Comfort**
- Tilt/telescopic steering wheel
 - Cab heater with filtered fresh air and defroster
 - Overhead console for radio and storage
 - Sun visor
 - Tinted glass
 - Can holder /storage tray
 - Cigarette lighter
 - Ashtray
 - Space for lunch cooler
 - Storage box

- Engine**
- Direct injected, electronically controlled
 - Turbocharged, intercooled
 - Remote oil drainage plug
 - Remote oil filters ease of access
 - Preheater for easier cold starts

OPTIONAL EQUIPMENT A25D – A30D
(Standard on certain markets)

- Safety**
- Fire-extinguisher and first aid kit

- Service and maintenance**
- Tool kit with tire inflation unit
 - Electrical hood opening

- Engine**
- Extra air cleaner, heavy duty
 - Electric engine heater (120V or 240V)
 - External emergency engine stop
 - Delayed engine stop

- Electrical**
- Work lights, roof mounted
 - Work lights, reverse, fender mounted
 - Rotating beacon, collapsible mount
 - Reverse alarm
 - Rear vision system
 - Anti-theft system (prevents engine start)
 - Head lights for left hand side traffic
 - Alternator, heavy duty 80 A

- Electric system**
- 55 A alternator
 - Battery disconnect switch
 - Extra 24 V socket for lunch cooler
 - Lights:
 - Headlights
 - Parking lights
 - Direction indicators
 - Rear lights
 - Reverse lights
 - Brake lights
 - Cab lighting
 - Instrument lighting

- Operator information interface**
- Gauges:
- Speedometer
 - Tachometer
 - Brake pressure
 - Fuel
 - Transmission oil temperature

- Pilot lamps for all switches
- Warning lamps grouped and easy to read

- Central warning (3 levels) for all vital functions
- Central positioned information display:
- Automatic pre-start checks
 - Operation information, easy-to-find menu
 - Trouble shooting diagnostics
 - Hour meter
 - Clock
 - Machine settings

- Drivetrain**
- Automatic transmission
 - Torque converter with automatic lock-up
 - Drop box, single stage
 - Hydraulic variable retarder
 - 6x4 or 6x6 operator selectable drive modes
 - 100% longitudinal differential lock
 - 100% differential locks in all axles

- Brakes**
- Air-hydraulic disc brakes
 - Two circuit brake system
 - Parking brake on prop shaft

- Body**
- Body prepared for exhaust heating
 - Load and Dump brake

- Tires**
- A25D: 23,5R25
 - A30D: 750/65R25

- Other**
- Air drier

- Cab**
- Air suspended, electrically heated operator's seat
 - Instructor seat with safety belt
 - Electrically heated rear-view mirrors
 - Air conditioning
 - Radio installation kit
 - Radio
 - Cable kit for cab heater (120V or 240V)
 - Solar guard film

- Body**
- Body exhaust heating kit

- A25D
- Underhung tailgate, link operated
 - Overhung tailgate, link operated (only in combination with underhung gate)
 - Overhung tailgate, wire operated

- A30D
- Underhung tailgate, link operated
 - Overhung tailgate, wire operated

- Wear plates
- Extra front spillguard
 - Upper side extension, 200 mm

- Tires**
- A30D: 23,5R25

- External**
- Rear mudflaps

- Other**
- Synthetic hydraulic oil (biologically degradable)
 - Arctic oil kit
 - Toolbox

The A35D – 40D in detail

Service

The computerized information system monitors all fluid levels, minimizing daily and weekly service times. Time to next service and the status of vital vehicle systems is shown to the operator on a display in the instrument panel.

Service accessibility: Fold down front grill with access ladder to remote filter bank, located in front of engine. Large, 90° opening hood for total engine access. Remote drain hoses and swing out radiator for easy cleaning.

Fill capacities

	A35D	A40D
Crankcase.....	50 l.....	50 l
Fuel tank	480 l.....	480 l
Cooling system	117 l.....	117 l
Transmission total	48,5 l.....	48,5 l
Dropbox.....	10,5 l.....	10,5 l
Per axle	48 l.....	55 l
Brake cooling tank.....	- -	103 l
Hydraulic tank	250 l.....	250 l

Engine

Volvo inline 6-cylinder, direct injected electronic controlled, turbocharged, intercooled 4-cycle low emission diesel engine with wet replaceable cylinder linings.

Fan: Hydrostatically driven, thermostatically controlled variable speed radiator fan consuming power only when needed.

Engine brake: VEB (Volvo Engine Brake) includes compression and exhaust brake.

A35D

Make, model	Volvo D12C ABE2*
Make, model	Volvo D12C ADE2**
Max power at	30 r/s (1 800 r/min)
SAE J1995 Gross	289 kW (393 hp)
Flywheel power at	30 r/s (1 800 r/min)
SAE J1349 Net, DIN 6271***	285 kW (388 hp)
Max torque at	20 r/s (1 200 r/min)
SAE J1995 Gross	1 950 Nm
SAE J1349 Net, DIN 6271***	1 915 Nm
Displacement total	12 l

*** A35D) With fan operating at full speed, the flywheel power is 277 kW (377 hp) and maximum torque is 1 860 Nm which corresponds to DIN 70020.

A40D

Make, model	Volvo D12C AAE2*
Make, model	Volvo D12C ACE2**
Max power at	30 r/s (1 800 r/min)
SAE J1995 Gross	313 kW (426 hp)
Flywheel power at	30 r/s (1 800 r/min)
SAE J1349 Net, DIN 6271***	309 kW (420 hp)
Max torque at	20 r/s (1 200 r/min)
SAE J1995 Gross	2 100 Nm
SAE J1349 Net, DIN 6271***	2 056 NM
Displacement total	12 l

*** A40D) With fan operating at full speed, the flywheel power is 301 kW (409 hp) and maximum torque is 2 010 Nm which corresponds to DIN 70020.

*) Meets US (EPA) step 2, California (CARB) step 2 and Europe (EU) step 2.

**) Meets Europe (EU) step 2.

The D12C engine is emission certified as a Family Engine with the following output data:
Rated power at 31,7 r/s (1 900 rpm)
SAE J1995 Gross 280 kW (381 hp)
Max torque at.....20 r/s (1 200 r/min)
SAE J1995 Gross2100 Nm



Electrical system

All cables, sockets and pins are identified. Cables are enclosed in plastic conduit and secured to main frame. Halogen lights. Prewired for options. Connectors meet IP67 standard for water-tightness as necessary.

Voltage	24 V
Battery capacity.....	2x170 Ah
Alternator	1,54 kW (55 A)
Starter motor	7,2 kW (10 hp)

Drivetrain

Volvo components, specifically designed for hauler applications.

Torque converter: Single stage with free wheeling stator and automatic lock up on all gears.

Transmission: Electronically controlled, fully automatic planetary transmission with six forward gears and two reverse gears, with an integral variable hydraulic retarder.

Dropbox: Volvo design with high and low function, power take-off and differential with 100% lock-up function. Separate dropbox oil cooling.

A40D: Automatic upshift low range to high range in 6th gear.

Axles: Volvo design with fully floating axle shafts and planetary type hub reductions.

Differential locks: One longitudinal and three transverse with 100% lock-up function, operator selectable on the move.

Configuration: 6x4 or 6x6 drive, operator selectable on the move.

	A35D	A40D
Torque converter.....	1,95:1.....	1,95:1
Transmission, Volvo	PT 1860.....	PT 1860
Dropbox, Volvo	FL 852.....	FL 862
Axles, Volvo	AH 64.....	AHW 71

Speed:

	A35D	A40D
Low gear forward		
1	5 km/h	6 km/h
2	8 km/h	9 km/h
3	15 km/h	16 km/h
4	21 km/h	24 km/h
5	27 km/h	31 km/h
6	35 km/h	41 km/h

Automatic upshift to 6th gear, High range 55 km/h

	A35D	A40D
High gear forward		
1	9 km/h	9 km/h
2	13 km/h	13 km/h
3	23 km/h	23 km/h
4	34 km/h	33 km/h
5	43 km/h	42 km/h
6	56 km/h	55 km/h

	A35D	A40D
Low gear reverse		
1	5 km/h.....	6 km/h
2	9 km/h.....	10 km/h
High gear reverse		
1	8 km/h	8 km/h
2	14 km/h	14 km/h

Brake system

A35D

Fully hydraulic brakes on all axles. Two circuits. Well protected components. Complies with ISO 3450 and SAE J1473 at total machine weight.

Service brakes: Dry discs on all wheels.

A40D

Fully hydraulic brakes with enclosed, forced oil-cooled multiple discs on all axles. Two circuits. Separate brake cooling for each axle. Complies with ISO 3450 and SAE J1473 at total machine weight.

Service brakes: Wet multiple disc brakes on all wheels.

Circuit division: One circuit for front axle and one for bogie axles.

Weights			Ground Pressure				Load Capacity		
Operating weight includes all fluids and operator			At 15% sinkage of unloaded radius and specified weights.				Body volume according to SAE 2:1		
	A35D	A40D		A35D		A40D			
Tires	26,5R25*	29,5R25**	Tires	26,5R25	775/65R29	29,5R29	875/65R29		
Front	15 320 kg	16 300 kg	Front	128 kPa	110 kPa	115 kPa	100 kPa	Load capacity	32 500 kg
Rear	12 980 kg	14 970 kg	Rear	54 kPa	46 kPa	53 kPa	47 kPa	Body, struck	15,2 m ³
Total	28 300 kg	31 270 kg	Loaded					Body, heaped	20,0 m ³
Payload	32 500 kg	37 000 kg	Front	149 kPa	128 kPa	135 kPa	118 kPa	With overhung tailgate	
Total weight			Rear	180 kPa	153 kPa	172 kPa	150 kPa	Body, struck	15,5 m ³
Front	17 770 kg	19 170 kg						Body, heaped	20,7 m ³
Rear	43 030 kg	49 100 kg							
Total	60 800 kg	68 270 kg							
*) A35D with tires 775/65R29, add 200 kg/ axle									
**) A40D with tires 875/65R29, add 300 kg/ axle									

Parking brake: Spring-applied disc brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%. When the parking brake is applied, the longitudinal differential is locked.

Compressor: Gear driven by engine transmission.

Retarder: Hydraulic, infinitely variable, integrated in transmission. Total retarding capability including transmission retarder and exhaust retarder, see graph.

Volvo Engine Brake: Standard. Operator selectable application together with service brakes or when accelerator pedal is released. Always engaged together with retarder. Total retarding capability including transmission retarder and engine brake, VEB, see graph.

Steering system

Hydromechanical self-compensating articulated steering for safe and accurate high speed hauling. Fast acting, low effort steering with 3,4 turns lock-to-lock for slow speed maneuverability.

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Complies with ISO 5010 at total machine weight.

Steering angle: ±45°

Suspension

Volvo's unique maintenance free 3-point suspension system. The axles are suspended at three points, which results in independent movement needed in rough terrain.

Front axle: The front suspension consists of one rubber spring, a stabilizer and three shock absorbers on each side.

Bogie: Volvo's unique terrain bogie permits long suspension travel and independent wheel movement, keeps the body level, retaining the load.

Cab

Volvo cab, designed for high operator visibility, ergonomics and comfort. Wide threshold-free door opening and ergonomic instep. Isolation rubber pads to reduce vibrations. Tilt/ telescopic steering wheel. Overhead console for radio and storage. Dash-mounted Operator's Communication System. Storage bins.

Standard: ROPS/FOPS tested and approved. (ISO 3471, SAE J1040) /(ISO 3449, SAE J231) standards.

Heater and defroster: Filtered fresh air, four speed fan and pressurized cab to maintain a clean operating environment. Multi-level air outlets and separate defroster vents for all windows.

Operator's seat: Adjustable air suspension operator's seat with flameproof upholstery. Retractable seat belt.

Trainer seat: Standard, with seat belt and back rest.

Internal sound level: ISO 6396 72 dB (A) at max. speed..... 76 dB (A)

Hydraulic system

Load-sensing variable displacement piston pumps that consume power only when needed.

Pumps: Seven engine driven, variable displacement, load sensing piston pumps driven by the flywheel PTO. One ground-dependent piston pump for supplemental steering mounted on the dropbox.

Filtration: Through two glass fiber filters with magnetic cores.

Pump capacity per pump:
Engine dependent 143 l/min
Ground dependent202 l/min
at shaft speed 47,5 r/s (2 850 r/min)
Working pressure.....25 MPa

Body

Load and dump brake: With the engine running, the service brakes on bogie axles are applied and transmission shifted to neutral.

Body material: Hardened and tempered steel body with high impact strength.

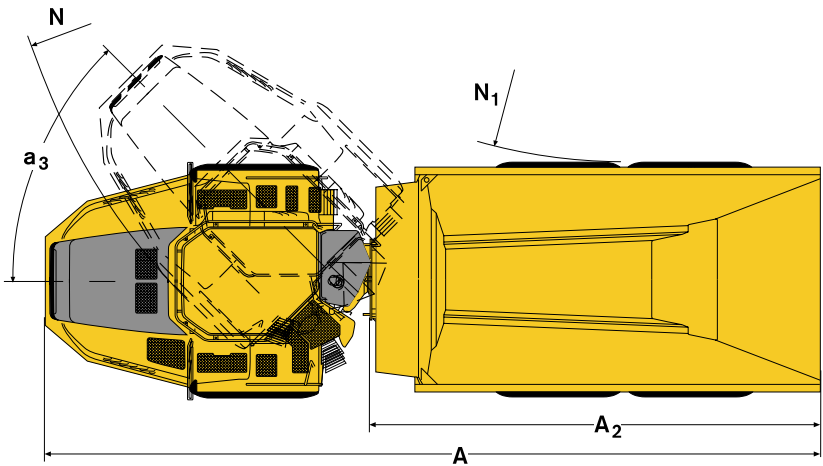
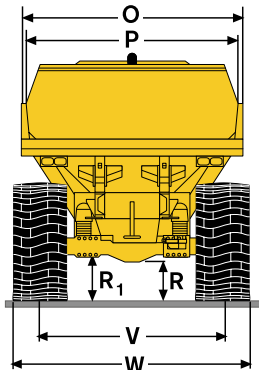
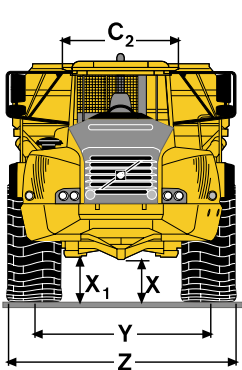
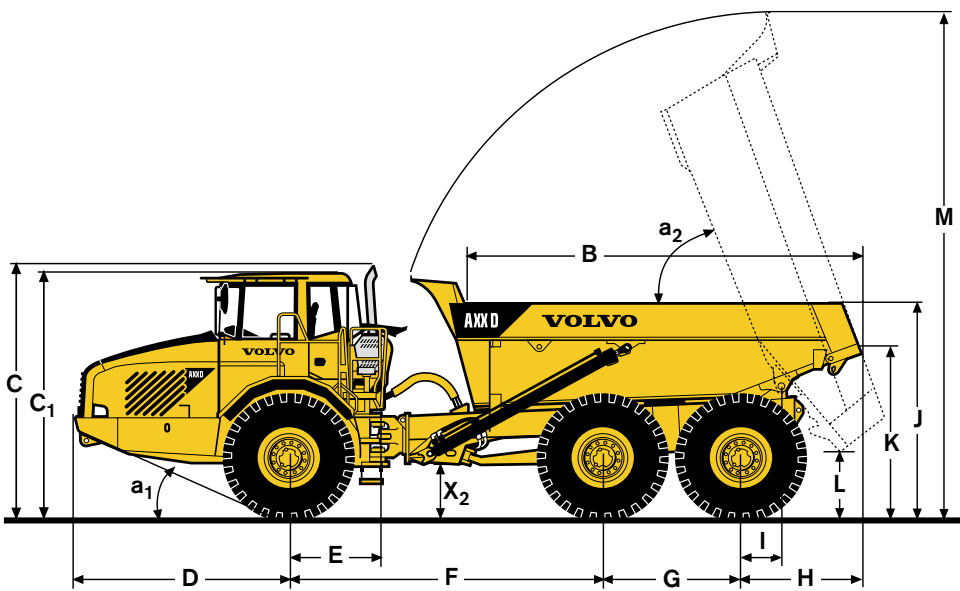
Front	8 mm
Sides	12 mm
Bottom/ Chute	16 mm
Yield strength	1 000 N/mm ²
Tensile strength	1 250 N/mm ²
Hardness min	400 HB

Dumping Cylinders: Two single stage double acting cylinders.

Tipping angle..... 70°
Tipping time with load..... 12 s
Lowering time..... 10 s

Specifications A35D – A40D

Pos	Metric (mm)		Imperial (Feet)	
	A35D	A40D	A35D	A40D
A	11 167	11 310	36'6"	37'1"
A ₂	6 224	6 428	20'4"	19'8"
B	5 527	5 730	16'9"	21'1"
C	3 681	3 746	12'1"	12'3"
C ₁	3 560	3 626	11'7"	11'9"
C ₂	1 768	1 768	5'8"	5'8"
C ₃	3 987	4 093	13'1"	13'4"
D	3 101	3 100	10'2"	10'2"
E	1 276	1 279	4'2"	4'2"
F	4 501	4 451	14'8"	14'6"
G	1 820	1 940	6'0"	6'4"
H	1 757	1 823	5'8"	6'0"
I	728	646	2'39"	2'12"
J	2 912	3 075	9'6"	10'0"
K	2 302	2 492	7'6"	8'2"
L	915	906	3'0"	2'97"
M	7 242	7 384	23'8"	24'2"
N	8 720	8 863	28'6"	29'1"
N ₁	4 397	4 238	14'4"	13'9"
O	3 103	3 268	10'2"	10'7"
P	2 870	3 078	9'4"	10'1"
R	584	654	1'92"	2'15"
R ₁	670	751	2'2"	2'46"
U	3 528	3 590	11'6"	11'8"
V	2 515	2 636	8'3"	8'7"
V*	2 625	-----	8'6"	-----
W	3 208	3 432	10'5"	11'3"
W *)**	3 410	3 570	11'2"	11'7"
X	572	617	1'88"	2'02"
X ₁	606	639	1'99"	2'1"
X ₂	720	765	2'36"	2'51"
Y	2 515	2 636	8'3"	8'7"
Y*	2 625	-----	7'4"	-----
Z	3 208	3 432	10'5"	11'3"
Z*)**	3 410	3 570	11'2"	11'7"
a ₁	23°	25°	-----	-----
a ₂	70°	70°	-----	-----
a ₃	45°	45°	-----	-----
A35D: Unloaded machine with 26,5R25 A40D: Unloaded machine with 29,5R29) A35D with optional 775/65R29 tires) A40D with optional 875/65R29 tires				



STANDARD EQUIPMENT A35D - A40D

Safety

- ROPS/ FOPS cab
- Anti-slip material on fenders and hood
- Dump body lock
- Hazard flashers
- Handrails on fenders
- Horn
- Protective grille for rear window
- Rear-view mirrors
- Retractable 3 inch wide seat belt
- Secondary steering
- Service platform for ease of service
- Steering joint locking assembly
- Windshield wipers with intermittent
- Windshield washers

Comfort

- Tilt/ telescopic steering wheel
- Ashtray
- Cab heater with filtered fresh air and defroster
- Can holder / storage tray
- Cigarette lighter
- Heated and air suspended fully adjustable operator's seat
- Instructor seat with backrest and retractable seat belt
- Overhead console for radio and storage
- Space for lunch cooler
- Storage box
- Sun visor, front window
- Tinted glass

Engine

- Direct injected, electronically controlled
- Volvo Engine Brake, VEB
- Coolant filter
- Intercooler, air-to-air cooler
- Remote oil filters for ease of access
- Remote oil drainage plug and hose
- Preheater for easier cold starts
- Turbocharged

OPTIONAL EQUIPMENT A35D – A40D

(Standard on certain markets)

Safety

- Fire-extinguisher and first aid kit

Service and maintenance

- Tool kit with tire inflation unit
- Electrical hood opening

Engine

- Engine coolant pre-heater (120V or 240V)
- External emergency stop
- Extra engine air cleaner
- Delayed engine stop

Electrical

- Anti-theft system (prevents engine start)
- Head lights for left hand traffic
- Rear vision system
- Reverse alarm
- Rotating beacon, collapsible mount
- Work lights, forward, roof-mounted
- Work lights, rearward, fender-mounted

Electric system

- Alternator
- Battery disconnect switch
- Electrical outlets, 24V in cab
- Lights:
 - Headlights, main/dipped
 - Parking lights
 - Direction indicators
 - Rear lights
 - Back-up lights
 - Brake lights
 - Cab lighting
 - Instrument lighting
 - Control panel lighting
- Pilot lamps for all switches

Operator information interface

- Gauges:
 - Speedometer
 - Tachometer
 - Brake pressure
 - Fuel
 - Transmission oil temperature
- Warning lamps grouped and easy to read
- Central warning (3 levels) for all vital functions

Central positioned information display:

- Automatic pre-start checks
- Operation information, easy-to-find menu
- Trouble shooting diagnostics
- Hour meter
- Clock
- Machine settings

Drivetrain

- Automatic transmission, electronically controlled
- Torque converter with automatic lock-up
- Variable hydraulic transmission retarder
- Dropbox with high/low range
- 6x4 or 6x6 operator selectable drive modes
- 100% longitudinal differential lock
- 100% differential locks in all axles

Brakes

A35D

- Two circuit, fully hydraulic disc brakes on all axles.

A40D

- Two circuit, fully hydraulic brakes with enclosed, forced oil-cooled multiple discs on all axles.
- Separate brake cooling for each axle.

- Volvo Engine Brake (VEB) activation in brake pedal
- Parking brake on prop shaft

Body

- Body prepared for exhaust heating
- Load and Dump brake

Tires

- A35D: 26,5R25
- A40D: 29,5R25

Other

- Air drier
- Tool box

Cab

- Air conditioning
- Armrests
- Head restraint
- Cable kit for cab heater (120V or 240V)
- Electrically heated rear-view mirrors
- Radio installation kit
- Radio
- Solar guard film, side windows

Brakes

- A35D: Fully hydraulic, forced oil-cooled wet disc brakes

Body

- Body exhaust heating kit
- Extra front spillguard
- Overhung tailgate, wire operated
- Wear plates, kit delivery
- Upper side extension, 200 mm

Tires

- A35D: 775/65R29
- A40D: 875/65R29

External

- A40D: Mudguard wideners (for 875/65R29 tires)
- Rear mudflaps

Other

- Synthetic hydraulic oil (biologically degradable)
- Arctic oil kit

Under our policy of continual product improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.



Technology on Human Terms

Volvo Construction Equipment is one of the world's leading manufacturers of construction machines, with a product range encompassing wheel loaders, excavators, articulated haulers, motor graders and more.

The tasks they face vary considerably, but they all share one vital feature: technology which helps man to perform better: safely, efficiently and with care of the environment. We refer to it as Technology on Human Terms.

The sheer width of the product range means it is always possible to choose exactly the right machine and attachment for the job. Each machine also comes with the quality, continuity and security which is represented by the

Volvo name. The strength of the service and parts organizations; the security of always having immediate access to leading-edge research and technical development are part of the Volvo name. A machine from Volvo meets the very highest demands in all kinds of jobs, under all conditions, the world over.

Volvo Construction Equipment develops, manufactures and markets construction equipment. We are a Volvo company with production facilities on four continents and a market presence in over 100 countries.

For more information please visit our website:
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